INTERNATIONAL MODELS AND POLICIES OF SUCCESSFUL CLUSTERS

Liliana SCUTARU
Stefan cel Mare University of Suceava, Romania
lilianas@seap.usv.ro

Abstract
The paper analyses two models of successful clusters at the international level, namely, the model of French competitiveness poles and the American model of innovative clusters. In this regard it was considered the study of the policies regarding the structure of organization and governance of the French and the American clusters, their principles of operation, funding systems, and their specific peculiarities. The paper also provides a comparative analysis of the main features of these two models of clusters, highlighting the factors that contribute to their success at the international level, aspects that are part of the competitiveness policy supported by the respective states.

Key words: *innovative cluster, pole of competitiveness, governance structure, funding systems, competitiveness policy*

JEL Classification: *G24, G28, M13, O11,O21, O38*

I. INTRODUCTION

Cluster-based economic development can be seen as a new development model through microeconomic policies widely expanded because the clusters are "the essential engines for the whole economic assembly of a region or nation", playing a key role in this process (Ketels, 2003, p. 19). In their turn, clusters can contribute to creating a new vision on economic policymaking by the public and private sectors, characterized by collaboration and consensus of all stakeholders, creating thus a two-way relationship between the two parties.

The economic development policy based on clusters has in view the fact that the all types of clusters are important due to the productivity they achieve and their ability to innovate, increasing the standard of living at regional level (Ketels, 2003). However, in order to stimulate and support innovation, in order to cope with global competition, for the 2014-2020 financial framework, the EU decided that the new funding through the Structural Funds Program should be primarily directed towards several sectors that can lead to high level performance in the research-innovation areas, namely, ICT, life sciences/health, energy, environment, agrifood industry, tourism, innovative materials (European Commission, 2010).

But this does not mean choosing a few clusters from the key areas on which the regional development policies focus on. The priorities should be guided by the competitive advantages that a region or a cluster wishes to highlight, thereby demonstrating the ability to contribute to increased competitiveness, at regional or national level. It is particularly important that the emerging clusters to be treated separately from those already mature that have some experience in business, through appropriate policies and programs for each type of cluster (Christensen et al., 2012).

For the public policy it is easier to sustain clusters already established to grow and develop rather than to create clusters from scratch. However, the policy makers and the practitioners should promote the creation of economic conditions that enable the creation of new clusters because such an environment may support the entrepreneurship, the mobility of specialized knowledge and capitals (Lindqvist et al., 2003; Ketels, 2013).

II. THE FRENCH MODEL OF CLUSTERS AND THE COMPETITIVENESS POLICY

In France, the clusters support policy was adopted in 2004 and implemented from 2005 onwards by launching a new type of industrial policy under the mane of ”France, industrial power” in order to increase the economic competitiveness. It was intended to improve the innovation capacity, the occupancy rate of the labour force and continuous training of personnel. The rationale for adopting an intensive industrial development policy in the country resides in the fact that the industry is the main economic sector of the country, absorbing about 90% of expenditure on research and development and contributing with 80% to the total exports (www.competitivite.gouv.fr). Therefore, France has a huge potential for development that need to be capitalized to the highest level.

The new industrial policy was released following the ineffectiveness of the landscaping policy implemented by almost fifty years ago, in the 60s, which had mainly aimed at reducing regional disparities by

avoiding concentration of industrial activities in some rich regions of the country and supporting the regions in decline.

A new attempt to support this policy occurred in 1987 through the initiative of creating local production systems (systèmes productifs locaux) – SPL, which had modest effects in terms of increased productivity and thereby the competitiveness of enterprises. SPL were focused mainly on production activities.

The SPL support policy sought then the state financial support for the companies with modest results in terms of productivity and strengthening collaboration of companies within the same economic field located in a specific geographical area. The cooperation with research centres, with workforce training centres or other institutions was not considered. The state funds allocated through calls for projects were initially modest, below the value of 40,000 EUR. However, SPL can be considered the precursors of the clusters and of the competitiveness poles from nowadays.

Through the new industrial policy launched in 2004-2005 the aim is to focus on research and development and the competitiveness poles represent the tools to realize this policy. The 103 SPL existent in 2005 were assessed and the ones oriented towards research and development and with potential for activities internationalization have received the name of **competitiveness poles (the equivalent of the term of cluster from the Anglo-Saxon terminology)**. In the next year, based on the establishment of a set of more complex evaluation criteria, there were rated as competitiveness poles a number of 67 clusters, and in 2007 their number increased to 71.

In France there are currently three types of clusters, namely: the poles of competitiveness, the business clusters (the so-called grappes d'entreprises) and the regional clusters. Of these, the competitiveness poles meet all the characteristics of a world-class innovation cluster, which promotes, par excellence, the research and development and the high technologies.

The label of "pole of competitiveness" is attributed to clusters by the Interministerial Committee for Territorial Planning, chaired by the Prime Minister, based on a set of decisive criterions: presenting a strategy for the economic development of the pole for a certain period of time, the existence of a partnership between all pole stakeholders and a basis for the operational governance, capacity of creating added value through research and development, international visibility.

Regarding the composition of the poles, about 72% of members are enterprises and, of these, nearly 60% are SMEs. These represent nearly 80% of the total French SMEs. As regards the sectors of the economy, 4% of the pole enterprises are operating in the primary sector, compared with a total of 13% of enterprises across the whole country, 40% are from the secondary sector, compared to a percent of 69% overall, and in the secondary sector there are operating 56% of the companies compared with 18% that are not part of the poles. This statistic confirms, once again, the enormous industrial potential of France.

II.1. THE GOVERNANCE STRUCTURE OF THE POLES AND THE OPERATING PRINCIPLES

Each cluster (pole of competitiveness) is represented and managed by its own legal entity that takes the form of an association. This structure consists of representatives of the industrial actors of the pole, which have priority, while also allowing the representation of the concerned local authorities. The association has a permanent team with the key role in terms of facilitating the projects implementation by different actors, both within a pole, and in the relationships with other poles. The state and the local authorities contribute to the financing of this structure based on a framework agreement, governing the relations between the pole, the state and the local authorities involved.

For the second stage of the French poles development, 2009-2012, also known as "Pôles 2.0", in addition to the continuous support for research and development, there were foreseen 3 coverage axes, namely:

- **necessity of a strategic management** of poles and signing of the "performance contracts", whereby every pole has the provision of a strategic action plan for the short and medium term (3-5 years) to achieve their own objectives;
- **increased support for the development of the innovation system and for the business growth** of pole enterprises by using more consistent private funding;
- **Development of structural projects,** including the innovation platforms. The innovation platforms represent the mutual aid structures and the rendering of services or resources of research-development and innovation for all the pole actors, especially for the SMEs in their structure.

The third stage of the policy regarding the French competitiveness poles, 2013-2018, is intended for the poles guidance to new markets and generation of new jobs. The priority is to create new products and services using the innovation potential of enterprises. In order to support the growth of companies there were identified four priority areas:

- **a well-developed system of access to finance for the companies,** through a wide variety of instruments: business angel, venture capital, private capitals, bank loans, funds for ensuring the development of start-ups;
- **Anticipating the needs in terms of competences in business of the enterprises,** thus aiming to develop the professional training offers, tailored to the needs of the companies;

- **Support for SMEs** through consulting services, including intellectual property issues, mentoring, sponsorship, in terms of modernization of the industrial processes and instruments;
- **International openness,** which seeks to identify new international export markets, to create technological partnerships with the foreign clusters, to develop the export capacity or platforms.

II.2. THE FUNDING SYSTEMS OF THE FRENCH COMPETITIVENESS POLES

All the poles of competitiveness receive financial support from the state and from the territorial authorities involved. *The Unique Interministerial Fund (UIF/ FUI)* is the main governmental instrument for financial support from the state. In the period between 2005 and 2008 through this instrument of action there was made available to the competitiveness poles a significant amount of 1.5 billion EUR, for supporting the best research and development projects and creating innovation platforms, and between 2009 and 2012 there was allocated also 1.5 billion. For the period 2013-2018 France is considering the mobilization of multiple funds on the basis of the *National Pact for Growth*, supported by a strong partnership between state and local authorities, in which the basic idea is that the poles of competitiveness are "the factories that produce for the future" (http://competitivite.gouv.fr).

UIF/ FUI is competed by a multitude of other funds of which we mention the ones supported by:

- *the contributions of the territorial or local communities*, understanding by these the public administration institutions at all levels: communal, municipal, district, regional;
- *the large companies that are part of the competitiveness poles;*
- *Financial aids provided through RDECCPLE/ DIRECCTE* (The Regional Directorate of Enterprise, Competition, Consumer Protection, Labour and Employment), created in 2009, which manages public policies in its areas of jurisdiction in territorial and regional levels concerning the development of local economic activities. RDECCPLE/ DIRECCTE cooperates with local authorities, providing, among other things, support for the competitiveness poles (http://www.direccte.gouv.fr);
- *the National Agency for Research (NAR/ ANR),* which is a funding agency established in 2005 that supports research projects both public and private, scientific or technological research for a period of 3 years. It also finances projects of international scientific cooperation. Its budget was of 350 million EUR in 2005 of 955 million in 2009, 557 million in 2011, 432.5 million in 2013 (http://www.agence-nationale-recherche.fr);
- *the Public Investment Bank* **(**PIB/ BPI), which has granted to the companies, in 2014, 1.1 billion EUR funding aids for innovation, by 43% more than in 2013. At the same time, the bank opened an office in Silicon Valley, California, in order to facilitate the penetration of the French start-ups in the centre of innovation in the worldwide Internet. Together with *Business France*, in June 2015 has released "Acceleratech China", a program that ensures for a total of 12 French companies the penetration on China's digital market in four main centres: Beijing, Shanghai, Shenzhen and Hong Kong. The motivation is given by the actual numbers: China has become the first worldwide market in the mobile telephony world, with 1.26 billion of subscribers, and the first market in the Internet sphere, with 670 million internet users, of which 50% are on smart phones. ITC field produces 26% of China's GDP and registers an annual growth of 20-30%, depending on sector (http://www.bpifrance.fr);
- *Business France*, a French public operator that supports the increase of competitiveness of the French companies by contributing to the internationalization of their businesses by increasing exports and also helping the foreign companies to locate in France (http://www.businessfrance.fr). In 2013 BPI has granted to a number of about 70,000 of SMEs secured loans amounting to 8 billion EUR, and in 2014 in the amount of 12.5 billion; export credits in the amount of 111 mill. EUR in 2014 of over 400 million; 747 mill. EUR for innovation activities, while the financing for innovation in 2014 has exceeded one billion EUR;
- *National Savings Bank* (Caisse des Dépôts et Consignations – CDC): represents a public financial institution of long-term investment that serves the economic development of the country. Among its operations, there is also the support of enterprises (http://www.caissedesdepots.fr). It is the correspondent to the current CEC Bank in Romania that was originally created in 1864 following the model of the French National Savings Bank;
- *The Investment in Future Program* (Programme d'Investissements d'Avenir – PIA), established through a legislative framework in March 2010, through which is provided the financial support to promote excellence in higher education and research. It is aimed at creating academic centres of excellence capable of competing worldwide. This program is implemented through international calls for projects on topics such as, for example, fundamental research, health and biotechnology, agronomy, digital economy, smart electricity networks, energy transition and ecology new growth models etc. From 2010 onwards through this program there were allocated 47 billion EUR.

III. THE AMERICAN MODEL OF CLUSTERS

The archetype model of clusters from around the world, Silicon Valley, continues to be, at the present moment, the first reference for innovation in ICT field, software and computer services. Located in the south of San Francisco, California, USA, its name comes from the high concentration enterprises operating in the software field and electronics and, one of the basic components of these products is the silicon. Here were born and are headquartered companies of worldwide reference such as Apple, Yahoo, Cisco Systems, eBay, Google, Hewlett-Packard, Intel, Adobe Systems, Oracle etc.

Born in the middle of the last century, Silicon Valley is characterized by a continuous growth, combined with a very dynamic development. The innovative capacity of the component companies, the growth of its activities and the worldwide product distribution volume are still unmatched (Mouly, 2014).

Fred Terman, one of the "founding parents" of Silicon Valley was unable to recreate the dynamics of this cluster on the east coast of the USA, in New Jersey when he was requested so. This proves the fact that the American clusters are distinct identities, characterized by a series of factors and features that distinguishes them from each other. Therefore, we cannot speak of an American cluster model that can be replicated.

Regarding Silicon Valley, which he calls "Tehnopol", Planque (1985) asserted that a high level of concentration of a large number of companies in a given space plays a decisive role in building networks for information exchange, fact that generates the phenomenon of "Tehnopolisation" contributing to its success. Several years later, Saxenian (1990) noted, in his turn, that Silicon Valley resists due to its social, professional and trade networks that it created over time, an example that, we subscribe, can be followed by the European Clusters.

The companies funding in Silicon Valley consists of attracting federal funds (including military contracts), along with a wide range of venture funds (venture capital funds) performed by various companies in the financial sector in the short and medium term. Silicon Valley attracts more than 40% of venture capital funds at national level (Florida, Kenney; 1990). To these are added the financial support of the great universities in the area, such as Stanford and Berkeley.

The success of Silicon Valley is based on a complex combination of factors: the use of cutting-edge technologies, the presence of internationally prestigious universities, enhanced mobility of the workforce and attracting permanent researchers in the area, the abundance of investments of venture capital and business angels type, entrepreneurship, business and internal social networks based on collaborative spirit and the dissemination of information among scientists and between companies, high adaptive capacity to respond to crises and competitors (Kenney, 2000; AUCAME, 2013).

Along with Silicon Valley we mention the famous Road 128, the cluster the Boston area located on the eastern coast of the USA, which includes the famous Street 128 with a length of 92 km, unique in the world due to the concentration of companies and research laboratories in top fields such as computer science, biotechnologies and nuclear technologies, supported by Institute of Technologies in Massachusetts and the famous Harvard University in Cambridge. It includes about 4,000 companies with over a million jobs.

Finally, for the completeness of the American clusters myth it is necessary to mention the almost equally famous Research Triangle. Located in North Carolina, Research Triangle is one of the largest concentrations of companies from the USA and the world, created as a research technology park in 1959 in ITC domain. It can compete with the Silicon Valley, but it does not rise to the Silicon Valley reputation.

Over time, the number of companies has increased and these have diversified their fields of activity so that today we find here companies in the sectors such as microelectronics, biotechnology, pharmaceutical, chemistry, telecommunications, and environmental sciences. Research Triangle is actually an accumulation of 10 clusters in different areas supporting the local economy through the attractiveness of various technology sectors palettes. This is, actually, one of the strategies adopted by the Research Triangle, namely, avoiding the development of a single economic sector and stimulating synergies between clusters in different areas. These clusters are nowadays at different stages of maturity.

Research Triangle is characterized by a close cooperation between the business environment, government institutions and universities in the region. It consists of 200 companies with 50,000 employees. The basic idea that animates them is permanent spirit of inquiry, supported by multiple investments. Annually there are nearly 300 million dollars invested here only in RDI, an amount double compared to the national average (http://www.rtp.org).

The success of Research Triangle derives, as in the case of Silicon Valley and Road 128, from a clever combination of several factors: large companies (IBM has the largest headquarters here, with about 11,000 employees), prestigious universities (Campbell, Duke, Chapel Hill etc.), large federal investment, venture capital investments and the business angels, a strong entrepreneurial spirit, etc.

In addition to these three clusters that constitute the American myth in the field, there are many other clusters operating in various fields, particularly in high tech areas, being also world-class clusters.

The rationale for the existence of an American cluster is to ensure local economic development by creating jobs and added value. The creation, growth and development is taking place on the basis of the private initiatives of locating and of the partnerships between SMEs and maintaining quality connections between them.

III.1. THE ORGANIZATIONAL AND GOVERNANCE STRUCTURE OF THE AMERICAN CLUSTERS

The American clusters do not possess their own legal entity of governance nor at local level nor at a national or federal level. Also, there is no classification system for clusters as there are in France, for instance, or in Japan or South Korea. Instead, a multitude of organizations having a diverse typology play an active role in their growth and development and also in achieving permanent complementary actions, on different levels, in favour of the clusters.

This wide range of organizations, supported by diverse funding sources, play a catalyst for growth, support and accelerator for the cluster component SMEs, consultancy and problem management. They nevertheless ensure multiple services of specialized support in order to establish, firstly, a sustainable internal relational structure between all cluster members to encourage interaction between them and, secondly, with the external environment of the cluster. Also, many of them play the role of funding agencies (Alcimed, 2008). These organizations can be found under various names such as: government agencies, local/ regional economic development agencies, innovation support organizations, industrial associations, centres of excellence, councils, SmartZones etc.

All these organizations have the motto in volunteering activities, which represent the basis of their existence. The volunteering is offered to SMEs in clusters, particularly in the emerging phase, characterized most often by a lack of resources, infrastructure and skills. Through volunteering there are encouraged start-ups launching and also attracting and creating partnerships with research institutes.

The American clusters are very numerous and operate in various fields of activity, being targeted towards the domestic market, such as the nationwide clusters, or having multiple worldwide connections and visibility. The latter are world-class clusters that are targeted by excellence towards sectors that create high and very high added value.

The majority worldwide clusters are located on the eastern coast, respectively, on the west of USA. These cover eight major fields of activity, each of them encompassing a plurality of subfields, for example:

- Life technologies include biotechnology, medical devices etc.;
- Chemistry and Materials: agro-chemistry, oil processing chemistry, cosmetics, pharmaceutical, etc.;
- Transport: aerospace, automotive, logistics etc.;
- ITC: software, semiconductors, telecommunications, optics, photonics, computer engineering etc.;
- Energy and environment: renewables own energies, biofuels, green building materials etc.;
- Agricultural and Food: agronomic biotechnologies etc.;
- Nanotechnologies: various materials and tools, electronics, health etc.;
- Advanced manufacturing processes: robotics, electronics, precision engineering, embedded systems etc.

The American clusters success is based on a very effective strategy supported by three strong pillars, namely: continuous innovation, technology transfer and application on the market, requalification and permanent attraction of highly qualified human capital and a very efficient financing system.

Innovation constitutes for the American clusters the source of competitiveness and the determining factor of maintaining in the global competition. Because the cluster system is very well organized in the existence of some very close collaboration links between the academic field and business environment, it offers the favourable permanent transfer of technologies and their application in the market. In this regard, all American universities have technology transfer offices. In addition to the investments in basic research, most of them are directed towards applied research and development. The US policy is therefore encouraging the technology transfer through universities and permanently creation of start-ups and spin-offs in order to contribute to the clusters expansion and, consequently, to the regional development.

Innovation is continuously stimulated through the centres of excellence and the various programs created for this purpose. Centres of excellence are created by combining the efforts of the state, academic environment and private sector in order to create companies in the new technologies domains and also to commercialize the innovation products.

Permanent attraction of talent and qualified personnel is a continuous concern for the USA. Thus, in each federal state there are permanent actions carried out jointly by representatives of universities, professional organizations, of economic development and colleges within a certain region in order to establish strategies and various concrete programs of action for competence development of the future graduates and their adaptation to the needs of local industry and also to create research competences related to advanced technologies (Alcimed, 2008).

To this is added an extensive outreach of efforts at state or federal level for the professional training of human capital, requalification and rapid adaptation to changes, needs and market opportunities, in line with the current technological progress. This is reflected in the development of various requalification programs for the development of an adapted and competitive human capital.

Each cluster policy is to maintain as much as possible, the specialized human capital in the universities of its interior or within various organizations of vocational training and requalification since the USA have the great feature of high labour mobility. Thus, in each cluster is closely watched the phenomenon of migration of

human capital, especially of the "brains" which are given some highly stimulating salaries and attractive career development plans.

Apart from all this, it is very well known the annual USA policy of attracting "brains" all around the world through various programs to contribute to its own development, his being a very successful strategy.

III.2. THE AMERICAN CLUSTERS FUNDING SYSTEM

The American clusters, contrary to expectations, are very strongly supported by the state, both at the federal level and at the level of each state and, more deeply, in the regions, counties or cities. It is primarily aimed that the clusters to be assisted with permanent insurance funds for innovation activities, establishment of laboratories for research and development of new technologies.

At the federal level, these are achieved through federal programs of funding, such as, for example, the Small Business Innovation Research (SBIR), created in 1982 for SMEs, completed in short time with the program Small Business Technology Transfer (STTR) designed for building research laboratories in universities. The annual budget allocated through SBIR is of 2 billion dollars. This fund consists of the allocations of 11 federal agencies and departments such as Department of Agriculture, Department of Energy, Department of Health and Human Services, National Aeronautics and Space Administration, National Science Foundation etc. (Alcimed, 2008).

The funding occurs in two stages: a $ 100,000 grant for 6 months for the start-up phase and $ 750,000 to a maximum of 2 years to develop prototypes, products etc. Also at the federal level, the major USA federal agencies, such as Small Business Administration grants or subsidizes loans RDI at universities. At the state level there is the system of financing through loans at preferential rates and special funds, with an annual budget of 2 bln. $. Locally, the clusters are funded by local authorities from public financing for creating jobs, supporting loans, relocating companies etc.

There are also a variety of private funds and other funds that permanently supply the innovation activities and technology transfer and their application on the market materialized in the marketing of products and services and also the establishment of start-ups and spin-offs that contribute to local development. In details, we can include the following forms of funding and the corresponding types of investors:

- Commercial banks, which offer companies advantageous credits;
- Funding from major companies within clusters, which provides about a third of the total funding for start-up stage;
- Private or mixed organizations that provide grants or loans at preferential rates;
- Investments of venture capital type (venture capital funds) and business angels. Opening local offices of venture capital and business angels in proximity to the place of innovation is crucial for ensuring continuous and various financing sources;
- A significant financial support from universities that are part of clusters. The American universities have intellectual property rights for the results of research conducted in their laboratories, capitalized by selling licenses. These institutions also develop with multinationals partnerships for educational projects or research contracts;
- Attracting of foreign direct investment (FDI) within clusters through programs undertaken on a maximum of 5 years in cutting-edge fields such as, for example, pharmaceutical, biotechnology, in order to contribute to the opening of business incubators, start-ups dynamics etc.

IV. COMPARATIVE ANALYSIS OF THE FRENCH AND THE AMERICAN CLUSTERS MODELS

The successful French and American cluster models that are subject of the present study are characterized by several common characteristics, but also by the existence of certain features specific to each cluster model studied. Making a comparative analysis of them, we consider the elaboration an overview of the most important features of these, many of them forming important success factors, an overview that can be traced in the following table:

Table no. 1. Comparative characteristics of French and American clusters models

Indicator	French Clusters	American Clusters
Name of clusters	Three categories: poles of competitiveness, business clusters, regional clusters	Innovative clusters
Governance structure	Own legal entity that takes the form of an association	Do not have their own legal entity of governance nor locally nor nationally or federally
Classification system	Classification of competitiveness poles in three categories: global, worldwide oriented, national	There is no classification system for clusters
Regional concentration	Especially in the eastern half of the country	High concentration of companies at regional level, especially on the eastern coast and the western
Funding System	Strong financial support from the state, to which is added a wide range of other funds	A very efficient system of financing through a strong support from the state + a very broad range of funds for the continuous funding of the innovation
The presence of universities	The existence in their composition of some prestigious international universities	The existence in their composition of some prestigious international universities
The presence of large companies	Large companies are members of clusters, contributing to their funding	Large companies are members of clusters, contributing to their funding
International visibility	A great international visibility due to the prestigious universities in their structure	A great international visibility due to the prestigious universities in their structure
Specialization	Specialization in the fields of high technologies	Specialization in the fields of high technologies
RDI Support	Research laboratories, present both in the universities and in the research institutions and the private sector	Multiple research laboratories, both in the universities and in the private sector
	Permanent innovation and the application of innovation in the market	Permanent innovation, technology transfer and application of innovation in the market. The American universities have the intellectual property rights for the results of research conducted in their laboratories, capitalized by selling licenses.
Policy towards FDI	Attracting funding in the form of FDI	International promotion in order to attract funding in the form of FDI
Level of qualification of the human capital	Possession of skilled and highly skilled workforce	Possession of skilled and highly skilled workforce
Mobility of the workforce	Low labour mobility and a strong nationalist character	High labour mobility and permanent attraction of "brains"
Requalification programs for Human capital	Adaptation to the market demands by implementing requalification programs for human capital	Adaptation to the market demands by implementing requalification programs for human capital
Professional Training	The existence of professional training courses for entrepreneurs	Continuous implementation of professional trainings for entrepreneurs
Internal social networking and innovation platforms	The existence of platforms for innovation and exchange of experiences among members	The existence of some business networks and some internal social networks based on the spirit of collaboration and dissemination of information among researchers and between the companies in the cluster
The entrepreneurial spirit	Moderate entrepreneurial spirit	A high entrepreneurial spirit, on a constant basis

What arises from this synthesis analysis is that the main success factors of clusters, both American and French clusters, are insured by the very efficient financing system supported by policies from the state, along with some features that are found in the both studied models: the existence in their composition of some prestigious international universities, specialization in the fields of high technologies, supporting research and innovation, technology transfer and application of innovation in the market, possession of skilled and highly skilled workforce, continuous implementation of qualification and requalification programs for human capital in accordance with the current labour market requirements.

V. CONCLUSION

Cluster-based economic development is a new model of regional development and implicitly national, through microeconomic policies widely extended because the clusters represent the engines of the regional development and implicitly national. Clusters can help create a new vision in terms of a state economic policy, contributing to strengthening the relations between the state, private sector, academic environment and all stakeholders interested in the smooth running of the economy.

The French poles of competitiveness meet all the characteristics of a world-class innovative cluster, promoting par excellence, research and development and high technologies. The American clusters are distinct identities characterized by a series of factors and features that differentiate them from each other. Therefore, one cannot speak of an American cluster model that can be replicated. Is worth mentioning that one of the determinants factors of a successful cluster consists in the massive capital investments performed in any legal form. Silicon Valley represents a role model for all clusters of the world, including for the clusters of the European countries that could increase cooperation among themselves through major European research programs, partnerships and European networks in the field that should lead in time to the construction of a genuine European Silicon Valley.

In conclusion, the main success factors of the two analysed clusters models in the present paper were synthesized as follows:

Table no. 2. The success factors of the French and American clusters

The success factors of the clusters	
The French poles	**The American Clusters**
• Strong financial support from the state, to which is added a wide range of other funds; • The existence in their composition of some prestigious international universities; • A great international visibility due to the universities in their structure; • specialization in the fields of high technologies; • Research laboratories, present both in the universities and in the research institutions and the private sector; • Attracting funding in the form of FDI; • Low labour mobility and a strong nationalist character; • Adaptation to the market requirements by implementing requalification programs for human capital.	• Large thematic diversification and specialization in the fields of high technologies; • The existence in their composition of some prestigious international universities; • Multiple research laboratories, both in the universities and in the private sector; • A great international visibility due to the universities and the research laboratories; • International promotion in order to attract funding in the form of FDI; • Possession of skilled and highly skilled workforce; • Adaptation to the market requirements by implementing requalification programs for human capital; • A very efficient system of financing through a strong support from the state + a very broad range of funds for the continuous funding of the innovation; • High concentration of companies in at regional level; • Permanent innovation, technology transfer and application of innovation in market; • High labour mobility and permanent attraction of "brains"; • The existence of some business networks and some internal social networks based on the spirit of collaboration and dissemination of information among researchers and between the companies in the cluster; • A strong entrepreneurial spirit that is grown on a constant basis.

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